



**PATENT APPLICATION**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of

Docket No: Q54404

Kaname MIWA, et al.

Appln. No.: 09/313,184

Group Art Unit: 1753

Confirmation No.: 3561

Examiner: Kaj K. OLSEN

Filed: May 18, 1999

For: SENSOR ELEMENT AND GAS SENSOR

**PRE-APPEAL BRIEF REQUEST FOR REVIEW**

**MAIL STOP AF - PATENTS**

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

Pursuant to the new Pre-Appeal Brief Conference Pilot Program, and further to the Examiner's Final Office Action dated November 27, 2006, Applicant files this Pre-Appeal Brief Request for Review. This Request is also accompanied by the filing of a Notice of Appeal.

Claims 16-20, 22, 24, 30 and 32-37 are all the claims pending in the application. Claims 36 and 37 have been allowed and claims 16-20, 22, 24, 30 and 32-35 stand rejected.

Applicant turns now to the rejections at issue:

**Claim Rejections - 35 U.S.C. § 102**

Claims 16-20, 22, 24, 30 and 32-35 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kato (U.S. Patent No. 5,672,811; "Kato '811") in view of Makino (U.S. Patent No. 5,676,811).

Additionally, the Examiner rejects claims 16-20, 22, 24, 30 and 32-35 based on the combination of JP 10-38845 ("JP '845") in view of Kato '811 and further in view of Makino.

Applicants respectfully disagree with these rejections.

The claimed invention recites that the areas of the negative and positive electrodes differ by at least twofold. Applicants explain that this lowers the element resistance and, thus, improves the measurement accuracy.<sup>1</sup> The claimed invention is allowable at least because the references relied upon by the Examiner, either alone or in combination, fail to teach electrodes having an area which differ by at least twofold.

The Examiner cites Fig. 2 of Kato '811 as allegedly teaching an electrode 28 having a side edge at least twice as long as that of electrode 24. The Examiner reasons that if both electrodes are *presumed* to have the same width, electrode 28 would have an area more than twice that of electrode 24. The Examiner relies on Fig. 2 of Makino as showing that it was known in the art to extend the electrodes of a gas sensor over the entire width range of a given chamber (citing electrode 8 and reference electrode 13).

Applicants respectfully disagree. Initially, Applicants note that the length of a single side edge (one dimension) says nothing about relative area (two dimensions). Furthermore, the Examiner's assertion, namely, that the electrode 28 is at least twice as long as electrode 24, is not supported by Kato '811. Additionally, nothing in Kato gives any indication that the electrodes are of the same width, and there is nothing in Makino which teaches or suggests that it would

---

<sup>1</sup> See, e.g., page 4, lines 15-18 of the present specification.

have been desirable to apply Fig. 2 of Makino to the specific sensor disclosed by Kato '811. Accordingly, Applicants respectfully disagree that Kato '811 in combination with Makino teaches electrodes with relative areas as claimed.

Initially, the Examiner's reliance on the proportions shown in the Kato '811 drawings is improper. Kato '811 does not state that the drawings are to scale. When drawings are not to scale, proportions of features in a drawing are not evidence of actual proportions.<sup>2</sup> Yet, the prior art cited as teaching the claimed electrode areas solely relies upon the Kato '811 drawings.

The rejection does not explain why the lengths of elements 24 and 28 in Fig. 2 can be relied upon as evidence of actual proportions, or why Fig. 2 would lead one of ordinary skill to make one electrode at least twice as long as another. In fact, the Kato '811 specification provides no guidance with regard to this last point. Furthermore, Applicants have attempted to measure the lengths of elements 24 and 28 in Fig. 2, and have found it difficult to determine if element 28 is actually twice as long as element 24 even in this not-to-scale drawing. Certainly a drawing which is not indicated as being drawn to scale, which may or may not have actual electrode lengths differing by a factor of two, and where the patent specification is silent as to relative electrode lengths, does not teach that electrode 28 is at least twice as long as electrode 24. Since Kato '811 does not teach electrodes which have lengths that differ by at least twofold, even if the electrodes did have the same widths, the prior art does not disclose electrode areas which differ by at least twofold.

---

<sup>2</sup> See, for example, MPEP §2125, and *Hockerson-Halberstadt, Inc. v. Avia Group Int'l.*, 222 F.3d 951, 956 (Fed. Cir. 2000).

Furthermore, even if Kato '811 did include electrodes which differed in length by at least twofold, the combination of Kato '811 and Makino still would not meet the claimed invention. Kato '811 does not teach anything regarding the relative areas of the electrodes 24 and 28. Further, keeping in mind that the present claims relate to a two-fold or greater difference in area, Makino which was cited as disclosing electrodes of the same width says nothing about the relative areas of the positive and negative electrodes. Since neither Kato '811 nor Makino teaches the relative areas of the respective electrodes as set forth in the claimed invention, this combination of references would not lead to a device with electrodes as claimed.

The Examiner is taking a drawing from Makino said to show electrodes extending over the entire width of the chamber, and reasons that it would likewise have been obvious to extend the electrodes of Kato '811 over the entire width of the chamber. However, there is nothing in the cited prior art as to why it would have been desirable to employ such an electrode arrangement, or why such electrode arrangement should be applied to the sensor of Kato '811 having a two-chamber structure entirely different from the single chamber sensor of Makino. For example, there is no teaching in Makino that electrodes with the same width are generally desirable, or that it would be desirable to include electrodes with the same width even if their lengths were different.

By applying Makino to Kato '811, the Examiner arrives at a modified sensor said to inherently have an area of the negative electrode and area of the positive electrode differing by at least twofold. However, this does not teach the subject limitation of the present claims, or the advantages thereof such that one of ordinary skill in the art could not have arrived at the claimed

arrangement in the absence of Applicants' teachings in the specification. Absent the discovery of reduced resistance when the area ratio is set as defined by the present claims, there would have been no motivation for one of ordinary skill in the art to make the claimed invention.

For the above reasons, it is respectfully submitted that the present claims are allowable over Kato '811 in view of Makino.

Claims 16-20, 22, 24, 30 and 32-35 are also rejected under 35 U.S.C. § 103(a) as being unpatentable over JP 10-38845 in view of Kato '811 and Makino.

JP '845 and Kato '841 are similar disclosures, and the Examiner's application of Makino to JP '845 also suffers from the same deficiencies as outlined above. The addition of Kato '811 to the combination of Makino and JP '845 is only for allegedly teaching porous platinum electrodes and does not correct the deficiencies of the Makino and JP '845 combination with respect to the claimed difference in electrode area.

Respectfully submitted,



Stephen R. Valancius  
Registration No. 57,574

SUGHRUE MION, PLLC  
Telephone: (202) 293-7060  
Facsimile: (202) 293-7860

WASHINGTON OFFICE

**23373**

CUSTOMER NUMBER

Date: March 27, 2007



Modified PTO/SB/33 (10-05)

## PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number

Q54404

Mail Stop AF  
Commissioner for Patents  
P.O. Box 1450 Alexandria, VA 22313-1450

Application Number

09/313,184

Filed

May 18, 1999

First Named Inventor

Kaname MIWA

Art Unit

1753

Examiner

Kaj K. OLSEN

WASHINGTON OFFICE

23373

CUSTOMER NUMBER

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal

The review is requested for the reasons(s) stated on the attached sheet(s).

Note: No more than five (5) pages may be provided.

☒ I am an attorney or agent of record.

Registration number 57,574

Signature

Stephen R. Valancius

Typed or printed name

(202) 293-7060

Telephone number

March 27, 2007

Date